

Physics 137a: Introduction to Quantum Mechanics

Instructor: Prof. Marjorie Shapiro

Class Hours: Mon, Wed and Fri 9-10AM in 343 LeConte

Office Hours: Mon and Fri 2:30-4:00 in 447 LeConte

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Course Description:

This course offers an introduction to the basic methods of quantum mechanics. Topics covered during this first semester of a two semester course include: historical development of quantum mechanics, wave mechanics, the Schrodinger equation with applications in one-dimensional problems, matrix representation of quantum mechanics, angular momentum, and an introduction to three dimensional applications of the Schrodinger equation, including the hydrogen atom.

Requirements:

Problem sets will be posted on the Web by the time of class each Friday and are due at 5 PM the next Friday (please place your solutions in the box labeled Physics 137A Section 1 in the 2nd floor Birge-LeConte Crossover). There will be two midterm exams, tentatively scheduled for Wed Feb 26 and Wed April 16, and a final exam. The final exam group is 04.

The class is graded out of a total of 500 points. Points are assigned as follows:

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| Homework: | 140 points |
| Midterm # 1: | 90 points |
| Midterm # 2: | 90 points |
| Final: | 180 points |
| Total: | 500 points |

References:

The required text for the class is David Griffiths, *Introduction to Quantum Mechanics*, Prentice Hall. However, we will not be following this text in detail. There are many other useful Quantum Mechanics reference texts. Some are:

- Bransden & Joachain, *Quantum Mechanics*, 2nd ed., Pearson Education.
- Richard Feynman, *The Feynman Lectures of Physics, Volume 3*, Addison-Wesley.
- Richard L Liboff, *Introduction to Quantum Mechanics*, Holden-Day, Inc.
- Hans C. Ohanian, *Principles of Quantum Mechanics*, Prentice Hall.

In addition, students will be expected to study topics of current interest by reading papers and articles posted on the Web.